



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/731,220

12/09/2003

Michael J. Sailor

0321.68542

4581

24978

7590

12/07/2006

GREER, BURNS & CRAIN
300 S WACKER DR
25TH FLOOR
CHICAGO, IL 60606

EXAMINER

GELLNER, JEFFREY L

ART UNIT

PAPER NUMBER

3643

DATE MAILED: 12/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/731,220

Applicant(s)

SAILOR ET AL.

Examiner

Jeffrey L. Gellner

Art Unit

3643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12, 14, 15 and 17-28 is/are pending in the application.
- 4a) Of the above claim(s) 4-7, 10, 12, 27 and 28 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14, 15, 17-26 is/are allowed.
- 6) ☒ Claim(s) 1-3, 8, 9 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 8, and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Simpson et al. (US 6,666,935 B1).

As to claims 1, 2, and 8, Simpson et al. discloses an initiator explosive device (abstract) for detonating a second explosive (capable of this use) comprising a nanocrystalline silicon having a plurality of pores disposed therein ("silica matrix" of col. 7 lines 23-26; col. 5 lines 35-40); and, a solid state oxidant ("PETN" of col. 7 lines 45-50) disposed within the pores (col. 7 lines 45-50).

As to claim 9, Simpson et al. further discloses the oxidant baked into the pores (from col. 7, lines 52-57).

Claims 1-3 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Hofmann et al. (US 6,984,274 B2).

As to claims 1-3, Hofmann et al. disclose an initiator explosive device (abstract) for detonating a second explosive (capable of this use) comprising a nanocrystalline silicon having a plurality of pores disposed therein (from col. 3 lines 43-68); and, a solid state oxidant of sodium, potassium, or ammonium nitrate (col. 4 lines 40-49) disposed within the pores (col. 5 lines 7-10).

Art Unit: 3643

As to claim 9, Simpson et al. further discloses the oxidant baked into the pores (from col. 3, lines 43-68).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being obvious over Simpson et al. (US 6,666,935 B1) in view of Aubert (US 4,705,582).

As to claim 3, the limitations of claim 2 are disclosed as described above. Not disclosed is the nitrate salt being potassium or ammonium nitrate. Aubert, however, discloses the substitution of PETN with potassium or ammonium nitrate (col. 2 lines 27-37). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Simpson et al. by using potassium or ammonium nitrate instead of PETN as disclosed by Aubert depending upon oxygen balance of the reaction and sensitivity needed for the explosion.

Claim 11 is rejected under 35 U.S.C. 103(a) as being obvious over Simpson et al. (US 6,666,935 B1).

As to claim 11, the limitations of claim 1 are disclosed as described above. Not disclosed is the nanocrystalline silicon being a thin film. It would have been obvious to one of ordinary

Art Unit: 3643

skill in the art at the time of the invention to modify the device of Simpson et al. by making into a thin film depending upon use of the device.

Allowable Subject Matter

Claims 14, 15, 17-26 are allowed.

Response to Arguments

Applicant's arguments filed 25 September 2006 have been fully considered but they are not persuasive. Applicants' arguments are: (1) Applicants consider the genus of solid state nitrate salts as oxidants to be awarded the priority date of the provisional application because gadolinium nitrate was discussed in the provisional application and it is merely reprehensive of the broader genus of solid state nitrate oxidants (Remarks middle of page 8); and, (2) Simpson et al.'s nanocrystalline silicon is made from sol and gel with pores between particles so the pores are not "in" the nanocrystalline silicon but "between" the particles (Remarks page 10 continuing to top of page 11).

As to argument (1), Applicants' provisional application (60/432,112) is directed to use of nanocrystalline porous silicon in atomic emission spectroscopy. Gadolinium nitrate is used because "[g]adolinium does not have any significant atomic emission lines (at 1st col. of page 39). The genus of solid state nitrate nitrates is not discussed. One of ordinary skill in the art would not inherently consider gadolinium nitrate to include other nitrates because they may have significant atomic emission lines.

As to argument (2), the silica aerogels of Simpson et al. is disclosed as "highly porous solids" at col. 5 lines 14-16. These aerogels would have the pores disposed therein even if the pores were formed in a different manner from Applicants. Further, Applicants do not claim the type of pores on there existence.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey L. Gellner whose telephone number is 571.272.6887. The examiner can normally be reached on Monday-Friday, 8:30-4:00, alternate.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Poon can be reached on 571.272.6891. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3643

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'J. L. Gellner', with a stylized flourish at the end.

Jeffrey L. Gellner
Primary Examiner
Art Unit 3643